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# REPORT TO THE EXECUTIVE OFFICE OF CONSUMER AFFAIRS

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## An evaluation of the Automobile Insurers Bureau's Analysis of Senate Bill 1548

942/277

ERNST & YOUNG

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March 12, 1994

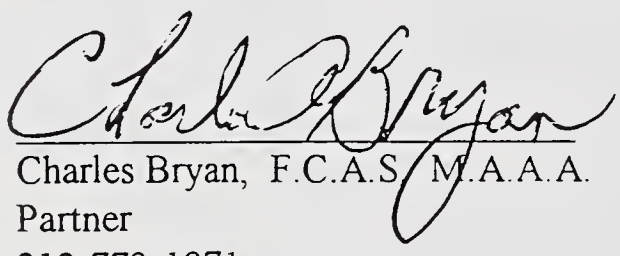
Ms. Priscilla H. Douglas
Secretary of Consumer Affairs
One Ashburton Place
Boston, MA 02108

Dear Ms. Douglas:

Enclosed is our final report documenting our review and evaluation of the Automobile Insurers Bureau's analysis of the potential impact on automobile insurance premiums of Senate Bill 1548.

If you have any questions regarding this report please contact either Charles Bryan or John Dawson at the numbers indicated below.

Very truly yours,



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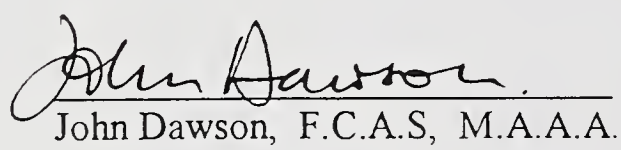

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Sr. Consulting Actuary
617-859-6327

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# I. Executive Summary

The Massachusetts Executive Office of Consumer Affairs has engaged Ernst & Young to review an analysis prepared by the Automobile Insurers Bureau of Massachusetts (AIB) to determine the potential impact on automobile insurance premiums of changing from the current no-fault reparations system to the reparations system that would exist under Senate Bill 1548[1].

The conclusions from our review are as follows:

- The methods and assumptions used by the AIB in their analysis of the effects of SB 1548 are actuarially sound.

- The 13% increase in current automobile insurance premiums projected by the AIB is an actuarially sound estimate of the expected additional premium that will need to be collected from Massachusetts policyholders to provide for the losses that will be paid by the automobile insurance system under SB 1548.

- Based on the results of our review and analysis of the AIB model, we believe any estimate between 10% and 15% would be an actuarially sound estimate of the increase in automobile insurance premiums under SB 1548.

- The model used by AIB does not consider some behavioral changes which may occur under SB 1548 and makes some other simplifying assumptions. It is our opinion that the exclusions of these behavioral changes and the simplifying assumptions do not materially effect the reasonableness of the model results.

- The estimated premium effect of 13% measures the instantaneous change in automobile insurance premiums of changing from the current no-fault system to the system that would exist under SB 1548. It does not measure the effect SB 1548 may have on long term frequency and severity trends and future rate changes.

[1]Throughout this report, reference to SB 1548 should be interpreted to mean SB 1543, as amended by the Senate January 17, 1994.

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# II. Scope and Limitations

The Massachusetts Executive Office of Consumer Affairs has engaged Ernst & Young to review an analysis prepared by the Automobile Insurers Bureau of Massachusetts (AIB) to determine the potential impact on automobile insurance premiums of changing from the current no-fault reparation system to the reparation system that would exist under Senate Bill 1548.

Ernst & Young has performed its evaluation by examining the general AIB approach, recalculating a selection of specific claim samples, holding discussions with AIB actuaries and legal counsel, and developing a range of reasonable expected changes in automobile insurance premium, by requesting AIB provide additional runs of their model with alternative parameters selected by Ernst & Young.

Ernst & Young has reviewed the data, the model output, and AIB's results for reasonableness. Most of the industry data used by AIB was gathered from statistical plan data which is subject to rigorous quality control standards. Certain of the detailed data were taken from studies which have been subjected to professional peer review prior to publication and have been scrutinized during the rate hearing process. Ernst & Young did not audit the underlying data, or verify all of the model calculations, other than examining the model output and results for reasonableness. Furthermore, Ernst & Young did not review the provisions of SB 1548 independently from AIB[2].

This review and evaluation should be used as additional information to help gain insight into the effects of adopting SB 1548 on automobile insurance premiums. Since any such study is subject to data limitations and behavioral changes that are not measurable in advance of actuarial experience being available, no one can guarantee that the actual experience under SB 1548 will be the same as the results projected using AIB's methodology, or any alternative methodology. This study's purpose was to evaluate whether the methodology and assumptions used by AIB

[2]Key provisions of SB 1548, as determined by AIB legal council and accepted without challenge by Ernst & Young, are summarized in Appendix A.

were reasonable in the circumstances, and to develop a range of alternate estimates which would also be considered reasonable.

This report is organized in the following sections:

| Section | Topic |
|---|---|
| III | Methodology and Model |
| IV | Sensitivity Analysis |
| V | Conclusions |

Prior to using this review in any decision, the results should be discussed with either Charles Bryan at 212/773-1871 or John Dawson at 617/859-6327.

# III Methodology & Model

The measurement of the effect of changes in an automobile reparations system is extremely complex due to the interrelationship of accident facts with coverage available to the insured and/or tortfeasor. AIB has selected an approach which is often used to estimate the effects of changes in reparation systems. The approach is based on a model of hypothetical automobile accidents and can be summarized as follows:

(1) A set of accident facts is created as representative of a broad range of potential claim situations.

(2) Probabilities are assigned to each situation.

(3) Insurance payment rules for the current system and under the new system are established.

(4) Losses are projected *under the current reparation system* using the accident facts(1), the probabilities(2), and payment rules(3). Model projections of key elements of the current system (claim severity, mix of BI, PIP & MP claims, etc.) are compared with industry statistical data. Certain assumptions are revised to improve the ability of the model to reproduce actual industry experience.

(5) Losses are projected under SB 1548 using the same basic assumptions established in step (4) and further assumptions regarding expected changes under SB 1548 (see Appendix A).

(6) A comparison of losses under each system gives the impact on bodily injury (BI) losses. Premium effects are determined based on the expense and profit loadings underlying the Commissioner's 1994 rate decision.

AIB's model is based on a set of 360 accident cases. The 360 cases are constructed by taking various combinations and probabilities of claimant fault, size of economic loss, medical/health coverage combinations, tortfeasor BI limit, and claimant UM/UIM coverage limit. Each of the 360 cases has an associated probability determined by multiplying the individual probabilities of at-fault, loss size, etc. Exhibit 1 displays how the 360 cases are derived.

The factors used in deriving the 360 cases were chosen because they are necessary for determining the extent of payment under the various coverages offered in the current reparation system and those that would be offered under SB 1548.

The parameters of the model are adjusted (calibrated) by AIB so that the results of the model reproduced key elements of the current reparation system. We judged the model parameters to be reasonable if certain calibration values were satisfied.

a) ***Cumulative BI Distribution Function (CDF) of Claim Severity.***
Exhibit 2 compares the CDFs from the AIB model with actual accident year 1991 CDF's for BI, PIP and Medical Payment's coverages. The model CDF's are similar in shape to the actual distributions only shifted to the right because of inflationary trends between 1991 and 1994. Based on this visual examination we have accepted the AIB model as passing this calibration test.

b) ***Ratio of other coverage dollars to total limits BI dollars.***
The following chart summarizes the results of this comparison for the AIB model:

| Coverage | 1993 Rate Base | AIB Model |
|---|---|---|
| PIP | 18% | 22% |
| MP | 2% | 3% |
| UM | 17% | 16% |
| UIM | 7% | 6% |

The model slightly overstates the proportion of PIP losses relative to BI losses. However, we do not consider this overstatement to be significant and we have accepted the AIB model as having passed this test.

c) *Loss Severities Fully Developed*

| Coverage | AY1991@Ult. trended to 1994[3] | AIB Model |
|---|---|---|
| BIL Total | $13,637 | $13,415 |
| PIP | $2,680 | $3,102 |
| MP | $2,583 | $3,065 |

The model produces claim severities for PIP and MP coverages that are higher than those based on 1991 accident year experience trended to 1994 cost levels. This suggests that the chosen economic size of loss distribution may have too many claims with large economic losses. While we believe the model adequately simulates claim severities for the purposes of analyzing the effects of SB 1548, in our alternative projections we have tested the sensitivity of results to the assumption of claim severity by varying the probabilities associated with claim size.

In addition to evaluating the AIB model in terms how well it reproduces key elements of the current system, we also evaluated the model in the following areas:

**(a) Split between medical and wage loss.**

We do not have data in sufficient detail to determine a definitive split between medical and wage loss components of economic damages. AIB used an assumption that, when there was wage loss (medical loss over $2,000), then net wage loss (after recovery) was one-third the medical loss. From our experience, this relationship does not seem unreasonable. However, we did test results under different splits (see Sensitivity Testing Section). The split did not make a substantial difference to the projected results.

**(b) Multipliers to go from economic damages to general damages.**

Numerous claim studies have evaluated the relationship (multiplier) of general damages to economic loss in automobile accident situations[4]. The

[3]AY 1991 trended to 1994 levels based on information in 1994 AIB 100C-1, Exhibits 1,2 & 4.
[4]1989 Insurance Research Council Report; 1991 American Risk & Insurance Association Report, Weisberg & Derrig.

multiplier varies by size of economic loss and decreases with increasing size of economic loss. The multipliers used by AIB, and those indicated in the 1989 Insurance Research Council (IRC) study, are displayed as follows:

| Economic Loss | AIB Multiplier | IRC Multiplier |
|---|---|---|
| $250 | 5.00 | 3.32 |
| 500 | 5.00 | 3.32 |
| 1,000 | 5.00 | 3.15 |
| 1,500 | 3.50 | 2.91 |
| 2,000 | 3.00 | 2.91 |
| 3,000 | 2.00 | 2.52 |
| 5,000 | 2.00 | 2.52 |
| 8,333 | 2.00 | 2.41 |
| 16,666 | 2.00 | 2.09 |
| 50,000 | 1.00 | 1.00 |

The multipliers selected by AIB are based on data collected in claim studies using Massachusetts specific data (see Weisberg & Derrig paper). The IRC study suggests lower factors are appropriate for smaller economic losses in tort states, however, it is based on states other than Massachusetts. The IRC data was selected to reflect a traditional tort environment in the evaluation of the effect of adopting SB 1548.

The assumption on the multiplier is one of the most critical parameters within the model. The effect of any overstatement in general damage multipliers would be to overstate the cost of going to the new system because the new system allows not-at-fault claimants to recover general damages which are not allowed for small claims under the current system because of the tort threshold. This overstatement is limited to claims at the lower end of the size of loss distribution because general damage losses are included in both systems for claims involving large economic losses.

We tested the sensitivity of projected results to the selection of multiplier by running the AIB model with three alternate sets of general damage

multipliers; Double AIB, Half AIB, and IRC. The results of these tests are described in the sensitivity section.

(c) **Loss Adjustments Expenses**

AIB's analysis assumes that the loss adjustment expense ratio will remain constant under both the current system and the SB 1548 system.

Our experience indicates that loss adjustment expense dollars are likely to increase under a tort system like SB 1548 because claim handlers must now deal with general damage issues on smaller claims. This will be partially, but not fully, offset by the savings realized from no longer having to pursue PIP subrogation recoveries from the tortfeasor's insurer. Overall, we believe the AIB's assumption that loss adjustment expenses will remain a constant percent of losses is reasonable.

(d) **Additional claims**

The AIB believes that in the current reparation system some not-at-fault injured parties with small economic losses (<$2,000) do not pursue claims under their automobile insurance policy (PIP & MP coverage) because either;

a) they have adequate coverage for their economic loss under other insurance programs (i.e. health, wage continuation, disability, etc..); and/or
b) they are fearful of premium (SDIP) surcharges; and/or
c) they don't want to undergo the process of filing an automobile claim.

AIB assumes that under SB 1548 some of these injured parties (5% of all BI claimants) will seek recovery under their automobile policy coverage because of the possibility of general damage awards at large multiplies of their economic loss. These additional claims will add costs to the automobile insurance system that do not exist in the current no-fault system.

A counter argument says that under the current system there has been an exaggeration, or build-up, of economic losses on smaller claims solely to

exceed the tort threshold and make general damage recoveries possible. Under SB 1548 it may be argued that the removal of the tort threshold will eliminate this artificial build-up, thereby reducing costs to the automobile insurance system.

We believe there is some merit to both positions. However, in our opinion, it is substantially more likely that there will be additional claims entering the new system. We, therefore, judge AIB's assumption of 5% more smaller claims to be reasonable but subject to substantial uncertainty. Accordingly, we have subjected this percentage to sensitivity testing.

(6) **Proportion of claims involving uninsured motorists**

The AIB model assumes that approximately 17% of claims currently in the automobile insurance system involve uninsured motorists. The estimate is based partly on industry experience but is also the result of the calibration process. For our analysis we have used assumptions of 15% and 5% for the uninsured motorist population.

(7) **Uninsured/Underinsured Motorist Coverage**

AIB assumes that under SB 1548 all policyholders will continue to purchase uninsured motorist (UM) and underinsured motorist (UIM) coverage at the same limit as under the current system. This assumption is based, in part, on the lack of any meaningful change in the distribution of UM and UIM limits over the past several years in spite of large increases in rates. Under SB 1548, UM is an optional coverage so the possibility exists that some policyholders will no longer purchase this coverage, especially since the rates for this particular coverage are projected by the AIB model to increase significantly under SB 1548.

We believe the AIB assumption regarding UM limits under SB 1548 is reasonable given the past evidence of policyholder insensitivity to price changes. Furthermore, we believe that under a tort system, agents will encourage policyholders to keep this coverage. Recognizing that this assumption is subject to a large degree of uncertainty, we have calculated the effect on premiums assuming half of those insured currently purchasing basic limits UM (30% of total claimant population) will no longer do so.

Underinsured Motorist coverage continues to be an optional coverage under SB 1548[5]. We believe that the AIB assumption that policyholders will continue to purchase UIM is not unreasonable given their prior purchasing habits. However, recognizing the fact that policyholders will, for the first time, be charged for basic limits UIM coverage under SB 1548, we feel it is reasonable to expect that some basic limit UIM purchasers will elect not to buy UIM under SB 1548. In one of our alternate calculations we have assumed that half of the basic limit UIM policyholders will eliminate coverage. We have also calculated the effect on premiums of assuming that all basic limit UIM policyholders eliminate coverage. We do not believe this is a realistic scenario but we used it to evaluate the overall sensitivity of the model to the assumption.

**(8) Profit Loading**

In calculating the effect on premiums, AIB assumes that the profit provision used in setting rates will not change as a result of SB 1548. Because the payment of total BI losses is likely to be slower under SB 1548, investment income on policyholder funds will be higher. This reduces the needed profit provision under SB 1548.

We have not adjusted our estimates of the premium effect of SB 1548 for changes in profit loadings. We believe the effect of not adjusting for profit provision changes will be immaterial to the overall results.

**(9) Finance Charge Effect**

Under SB 1548, the annual finance charge rate is dropped from 15% to 1%. The 1994 rates, as set by the Commissioner, include an offset (reduction) to premiums of 2.2% in anticipation of insurers receiving additional income from the finance charge of 15%. With the reduction of the rate to only 1%, the magnitude of the offset will be reduced substantially and premiums charged policyholders will increase. The AIB has estimated the impact of the elimination of the offset at 2.1% of

[5]All policyholders have at least basic limits UIM coverage under the current system because the coverage is a difference in limits form.

premium (14/15 of 2.2%). We judge this to be a reasonable adjustment and have included an additional 2.1% premium impact in all of our alternate calculations.

(10) **Other variables**

There are other assumptions within the AIB model, such as health insurance allowance ratio, PIP subrogation frequency, at fault vs. not-at-fault percentages, and others. We have discussed these variables extensively with the AIB and are satisfied that, in the aggregate these assumptions are reasonable.

## Summary

We believe the AIB model is a reasonable approach to measuring the effect of changes in the automobile reparation system brought about by SB 1548. The values chosen by AIB for the numerous parameters and assumptions within the model are individually, and collectively, reasonable. The sensitivity analysis section considers other possible values for the model parameters which we feel are reasonable and provides the corresponding model results.

# IV. Sensitivity Testing

## A. Overview

In the prior section, we have described the AIB methodology and some of the important assumptions (parameters) used to derive their estimates of the impact on automobile insurance premiums. While we have concluded that the AIB methodology and parameter selections are reasonable for purposes of estimating the effect of SB 1548 on automobile insurance premiums, a number of different parameter values could also be considered reasonable.

In the process of our review its was determined that in one area of the model the treatment of uninsured motorist claims, and the calculation of losses, was not being handled correctly. AIB has corrected this area of their model. For purposes of our analysis of the sensitivity of the AIB model to the underlying assumptions we have used the revised model.

In this section we derive a range of reasonable estimates of the impact on premiums by varying parameter values within the framework of the revised AIB model.

## B. Testing Results

We performed a total of 21 additional model projections by varying a number of parameters within the AIB model. Exhibit 3, Sheet 1 describes each alternative set of assumptions. Exhibit 3, Sheets 2 & 3, displays the corresponding model results. The results may be summarized as follows

- The base case scenario produced an estimated premium effect of 11.2%. This result reflects the revised model and all of AIB's base assumptions except for PIP subrogation frequency and UM population, To calibrate the revised model we have adjusted the AIB selected PIP subrogation rate and UM population assumptions from 60% and 20% to 70% and 15%, respectively.

- Alternate assumptions regarding the level of additional small claims entering the automobile system (Cases 1,2 & 3) give premium effects

which range from 9% to 12%, as compared to 11.2% under the base case assumptions. Thus, results are not significantly affected by reasonable variations in the level of new claimants into the system. Most significantly, a 10% reduction in small claims (<$2,000) still produces an increase of 9% in premiums.

- The alternate general damage multipliers (Cases 4, 5 & 6) give results between 9% and 15%. When these assumptions are combined with the assumptions of new claimants (Cases 7, 8 & 9), the results range from 9% to 16%. These results imply that even if the build-up of economic damages is reduced under SB 1548 (i.e. lower multipliers or fewer claimants), premiums are still projected to increase by at least 9%.

- Changing the percentage of uninsured motorists involved in BI claims from 15% to 5% (Cases 10, 11 & 12) has minimal impact on the results.

- The alternative size of loss distributions tested (Cases 14, 15, 16, 17 & 18), produce premium effects that range from 12% to 14.5%, slightly higher than the base result of 11.2%. Including different general damage multipliers, as well as revised size of loss distribution, gives results that range from 10% to 16%.

- The alternate assumptions regarding UM/UIM limits purchased under SB 1548 (Cases 19, 20 & 21) give results that range from 7% to 10%. It should be noted, however, that these lower results are largely due to the assumption in these scenarios that policyholders purchase less UM or UIM coverage under SB 1548.

The series of alternative model simulations provide estimates of the effect on total automobile insurance premiums (all coverages) that range from a low of 8% to a high of 16%. Excluding those cases among the 21 alternatives which we consider to be the least likely, or least reliable, leaves remaining estimates that range from approximately 10% to 15%. The AIB estimate of 13% is within this band.

## C. Other Comments

It is possible to extend the range indicated above by making other assumptions regarding loss adjustment expenses, changes in company expense levels, altering the accident fact situations, and so on. Some of the additional refinements which could be incorporated in the model include:

- Differing effects by urban (larger increase) and non-urban (lesser increase) areas.
- Reduction in fraudulent claims under SB 1548 because there is no longer a need to build-up economic damages to meet the tort threshold.
- Increased loss adjustment expense due to claim handlers dealing with general damages.
- Changes in claim severity levels due to a longer claim settlement time.
- Potential increases in general damages level due to need to cover attorney's fees in smaller cases.

Some of the above refinements involve behavioral changes on the part of the insured population. Such changes cannot be easily quantified for purposes of inclusion in the model. However, it is reasonable to say that some of the adjustments would likely increase the effect on premiums while others will probably lessen the effect. We are confident that the range of estimates derived from the alternative simulations would encompass the overall impact these behavioral changes would likely have on premiums.

# V. Conclusion

The conclusions from our evaluation of AIB's pricing of SB 1548 are as follows:

*(1)* ***The AIB approach is actuarially sound.***

The methodology used by the AIB complies with the Casualty Actuarial Society "Statement of Principles Regarding Property and Casualty Insurance Ratemaking" to the extent the principles are applicable to this situation.

*(2)* ***There is a range of reasonable estimates of the effect on automobile premiums.***

The total effect, as estimated by the AIB, is 13% on all total automobile insurance premiums. The complete range of estimates produced by our sensitivity testing was 8% to 16%. Excluding those estimates which we believe are based on the least likely set of alternate assumptions, the remaining estimates range from 10% to 15%. We believe this range represents a reasonable range of estimates of the potential effect of SB 1548 on automobile insurance premiums.

*(3)* ***The AIB estimates did not consider some behavioral changes which may occur.***

Possible behavioral changes include; a potential increase in loss adjustment expense, as a percent of losses, due to a more complex claims settlement environment for small claims; a potential reduction in fraud associated with build-up of medical claim values; an eventual increase in litigation costs due to a migration of attorneys back into the automobile personal injury area; changes in the general damages to special damages multipliers as a result of increased attorney involvement; and changes in policyholder purchasing patterns on UM/UIM coverage. Some of these changes would increase the calculated effect on automobile insurance premiums while others would lower the estimated effect on premiums. Overall, we believe that the exclusion of these behavioral changes from the model does not bias the results of the model in any meaningful way.

*(4)* ***The AIB model makes some broad simplifying assumptions.***

Some of these assumptions included the use of only 10 claims sizes, fixed general damages for each size of loss, statewide application, and similar simplifications. We believe these simplifications do not materially effect the reliability of the results of the AIB model.

*(5)* ***The claims used by the model were not real claims but were constructed to represent classes of claims.***

The reliability of the AIB methodology is rooted in the selection of the constructed claims. Other studies analyzing the effect of changes in automobile reparation systems have utilized actual claims experience and claim specialists to estimate the outcome of claims under alternative systems. Based on our review we believe the use of constructed claims rather than actual claims does not materially affect the reliability of the model results.

*(6)* ***Instantaneous change on a statewide basis.***

The model measures the instantaneous change in statewide average premiums that would be necessary to maintain rates at the current level of adequacy. The model does not measure any effect of SB 1548 on long-term trends in claim frequency or claim severity which could affect future automobile insurance premiums.

*(7)* ***Additional Considerations.***

This evaluation was conducted under strict time and budgetary constraints. As part of the evaluation, we surfaced a number of additional analytical tools that can be applied to provide further insight into the pricing of SB 1548:

- A stratified sample of actual claims could be selected and evaluated by experienced claims specialists under both systems.
- The AIB model could be enhanced by using more refined parameter assumptions such partial fault, more claim sizes, varying loss adjustment expense percentages, varying general damage amounts for each size of economic loss, and so on.

- A territorial approach could be incorporated in the model to reflect an expected greater impact in urban areas compared to non-urban areas.
- Current Massachusetts claims data could be compared with data from other studies, such as those of the Insurance Research Council (IRC), to validate reasonableness of the data.

**********

Analysis of Senate Bill 1548
AIB Model Structure

Exhibit 1

1. At Fault/Not–at–Fault:

| 0% At Fault, ex Guest(70%) | 0% At Fault, Guest(7%) | 100% At Fault(23%) |
|---|---|---|

2. Economic Size of Loss:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $Amt. | 250 | 500 | 1,000 | 1,500 | 2,000 | 3,333 | 5,000 | 8,333 | 16,666 | 50,000 |
| Prob. | 0.09 | 0.06 | 0.13 | 0.07 | 0.18 | 0.14 | 0.12 | 0.10 | 0.06 | 0.05 |

3. Medical/Health Comb.:

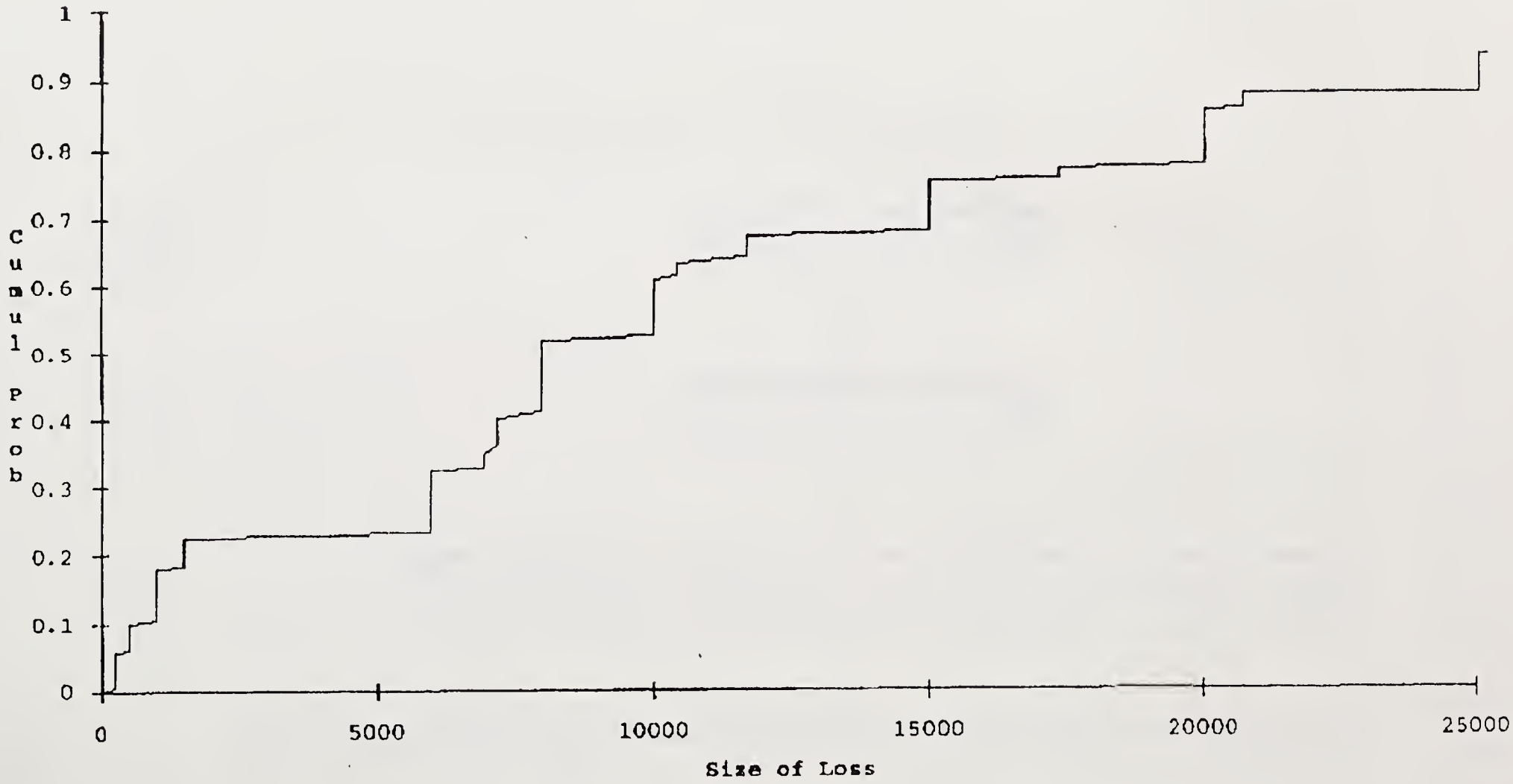
| | | | | |
|---|---|---|---|---|
| Type | M | H | B | N |
| Prob. | 0.25 | 0.50 | 0.15 | 0.10 |

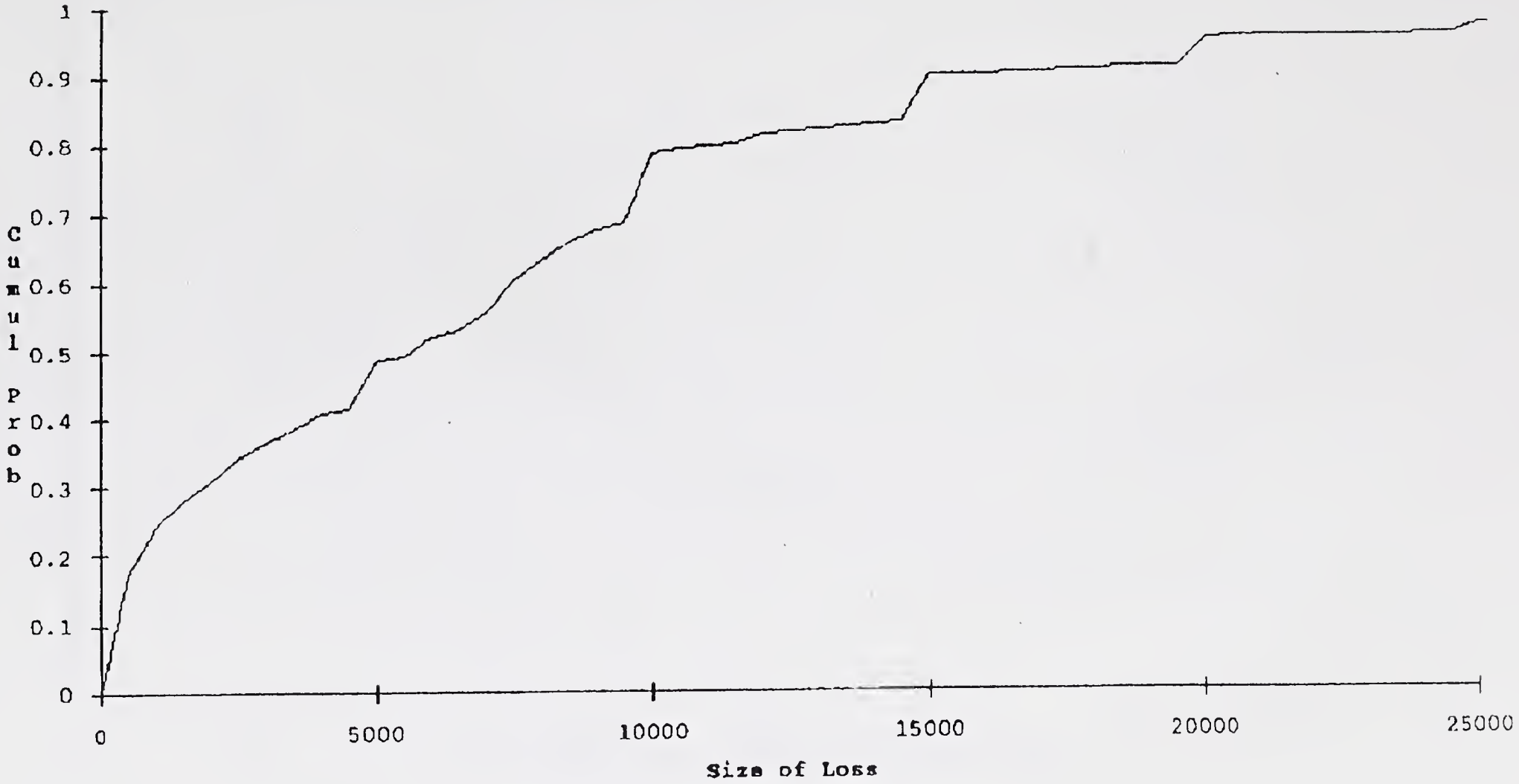
4. Tortfeasor BI Limit:

| | | | | |
|---|---|---|---|---|
| $Limit | $20 | $25 | $50 | $100 |
| Prob. | 0.35 | 0.10 | 0.15 | 0.40 |

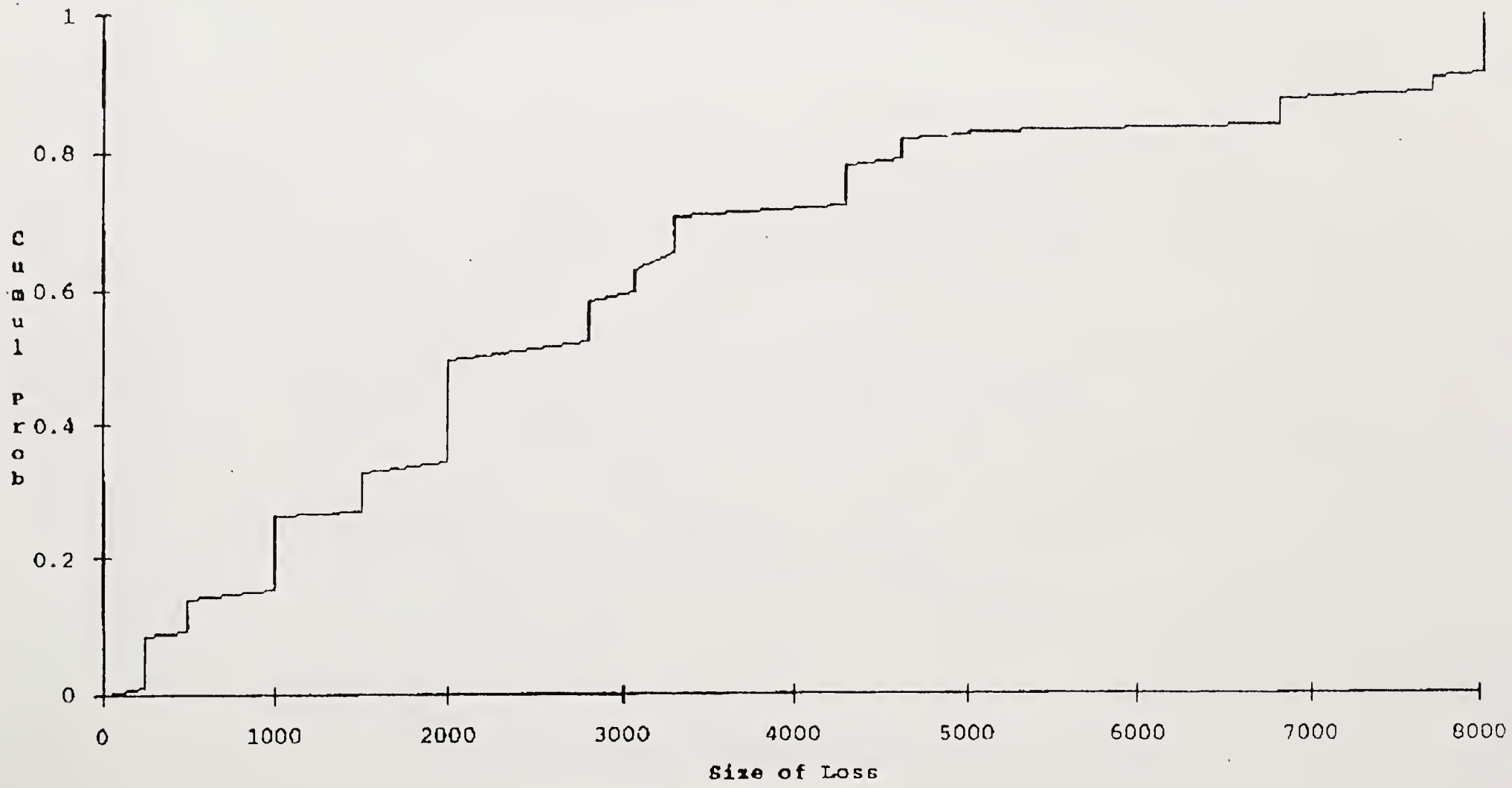
EXIHIBIT 2
SHEET 1

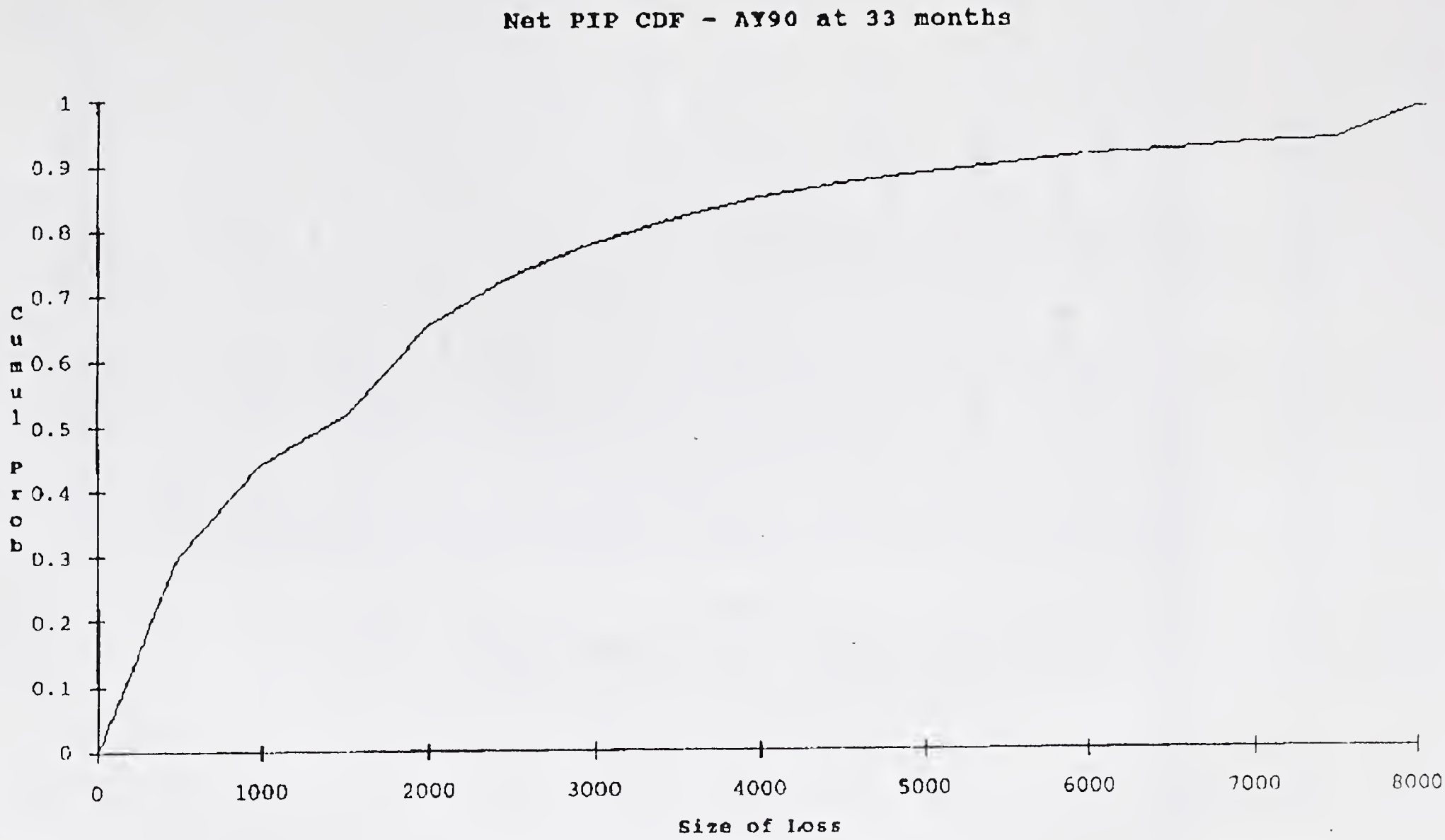
## Net BI Liability CDF - Current System Model




Net BI Liability CDF - AY90 at 33 months
Cumul Prob
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
5000
10000
15000
20000
25000
Size of Loss

## Net PIP CDF - Current System Model




Net PIP CDF - AY90 at 33 months
Cumul prob
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
1000
2000
3000
4000
5000
6000
7000
8000
Size of loss

# Alternate Model Assumptions

| Case # | Description |
|---|---|
| 1 | AIB base case with 10% ***more*** claimants (<$2,000). |
| 2 | AIB base case with ***no new*** claimants. |
| 3 | AIB base case with 10% ***fewer*** claimants (<$2,000). |
| 4 | AIB base case with IRC GD multipliers |
| 5 | Case #4 with no additional claimants |
| 6 | AIB base case with double multipliers |
| 7 | AIB base case with multipliers halved |
| 8 | Case #6 with 10% more claimants |
| 9 | Case #7 with no additional claimants |
| 10 | AIB base case with 5% uninsured motorist |
| 11 | Case #7 with 5% uninsured motorist |
| 12 | Case #6 with 5% uninsured motorist |
| 13 | AIB base case with medical/wage components 50/50 |
| 14 | AIB base case with alternate A size of loss distribution |
| 15 | AIB base case with alternate B size of loss distribution |
| 16 | AIB base case with alternate C size of loss distribution |
| 17 | Case #4 with alternate A size of loss distribution |
| 18 | Case #6 with alternate A size of loss distribution |
| 19 | AIB base case with half of basic limit UM policyholders opting not to purchase UM coverage |
| 20 | AIB base case with half of basic limit UM & UIM policyholders opting not to purchase UM or UIM coverage |
| 21 | AIB base case with half of basic limit UM policyholders opting not to purchase UM coverage and all basic limit UIM policyholders opting to eliminate coverage |

Analysis of Senate Bill 1548
Results of Alternative Projections



| | 1993 Rates | Base | Ernst & Young Alternative Scenarios #1 | #2 | #3 | #4 | #5 | #6 | #7 | #8 | #9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Test #1: Ratio to Total BIL$: | | | | | | | | | | | |
| PIP | 18% | 26% | 26% | 26% | 26% | 24% | 24% | 20% | 33% | 20% | 33% |
| MP | 2% | 4% | 4% | 4% | 4% | 4% | 4% | 3% | 5% | 3% | 5% |
| UM | 17% | 14% | 14% | 14% | 14% | 14% | 14% | 14% | 13% | 14% | 13% |
| UIM | 7% | 6% | 6% | 6% | 6% | 6% | 6% | 7% | 6% | 7% | 6% |
| Test #2: Ratio to #BIL Claims: | | | | | | | | | | | |
| PIP | 94% | 92% | 92% | 92% | 92% | 94% | 94% | 100% | 89% | 100% | 89% |
| MP | 13% | 17% | 17% | 17% | 17% | 17% | 17% | 17% | 17% | 17% | 17% |
| Test #3: Loss Severities: | | | | | | | | | | | |
| BIL | $13,176 | $13,164 | $13,164 | $13,164 | $13,164 | $14,053 | $14,053 | $18,769 | $9,873 | $18,769 | $9,873 |
| PIP | $2,508 | $3,656 | $3,656 | $3,656 | $3,656 | $3,664 | $3,664 | $3,727 | $3,670 | $3,727 | $3,670 |
| MP | $2,555 | $3,065 | $3,065 | $3,065 | $3,065 | $3,065 | $3,065 | $3,065 | $3,065 | $3,065 | $3,065 |
| Test #4: PIP Subro/BIL Loss$: | 6% | 13% | 13% | 13% | 13% | 11% | 11% | 7% | 18% | 7% | 18% |
| Total BI$ Current System | | $11,202 | $11,202 | $11,202 | $11,202 | $11,202 | $11,859 | $11,859 | $15,438 | $8,849 | $15,438 | $8,849 |
| Total BI$ SB 1548 System | | $13,142 | $13,329 | $12,954 | $12,579 | $13,478 | $13,333 | $19,193 | $10,146 | $19,521 | $10,029 |
| Percent Change in BI Losses | | 17.3% | 19.0% | 15.6% | 12.3% | 13.7% | 12.4% | 24.3% | 14.7% | 26.4% | 13.3% |
| 1994 Premium Effect–All Coverages | | 9.1% | 10.0% | 8.2% | 6.5% | 7.2% | 6.5% | 12.8% | 7.7% | 13.9% | 7.0% |
| Finance Charge Effect | | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% |
| Total Premium Effect–All Coverages | | 11.2% | 12.1% | 10.3% | 8.6% | 9.3% | 8.6% | 14.9% | 9.8% | 16.0% | 9.1% |

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| | #10 | #11 | #12 | #13 | #14 | #15 | #16 | #17 | #18 | #19 | #20 | #21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Test #1: Ratio to Total BIL$: | | | | | | | | | | | | |
| PIP | 22% | 28% | 17% | 27% | 27% | 28% | 27% | 25% | 20% | 26% | 26% | 26% |
| MP | 4% | 5% | 3% | 4% | 4% | 4% | 4% | 4% | 3% | 4% | 4% | 4% |
| UM | 4% | 4% | 4% | 14% | 14% | 14% | 14% | 14% | 14% | 14% | 14% | 14% |
| UIM | 6% | 6% | 7% | 6% | 4% | 5% | 5% | 5% | 6% | 6% | 6% | 6% |
| Test #2: Ratio to #BIL Claims: | | | | | | | | | | | | |
| PIP | 86% | 83% | 92% | 92% | 92% | 94% | 92% | 94% | 99% | 92% | 92% | 92% |
| MP | 15% | 15% | 15% | 17% | 16% | 15% | 14% | 16% | 16% | 17% | 17% | 17% |
| Test #3: Loss Severities: | | | | | | | | | | | | |
| BIL | $13,164 | $9,873 | $18,769 | $13,122 | $12,007 | $10,799 | $10,993 | $12,903 | $17,631 | $13,164 | $13,164 | $13,164 |
| PIP | $3,324 | $3,305 | $3,465 | $3,852 | $3,478 | $3,174 | $3,284 | $3,488 | $3,542 | $3,656 | $3,656 | $3,656 |
| MP | $3,065 | $3,065 | $3,065 | $3,342 | $2,893 | $2,770 | $2,770 | $2,893 | $2,893 | $3,065 | $3,065 | $3,065 |
| Test #4: PIP Subro/BIL Loss$: | 13% | 18% | 7% | 13% | 14% | 15% | 15% | 12% | 8% | 13% | 13% | 13% |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total BI$ Current System | $11,340 | $8,956 | $15,688 | $11,219 | $10,120 | $8,848 | $9,177 | $10,778 | $14,298 | $11,202 | $11,202 | $11,202 |
| Total BI$ SB 1548 System | $13,393 | $10,333 | $19,684 | $13,093 | $12,043 | $10,923 | $11,277 | $12,367 | $17,980 | $12,773 | $12,515 | $12,257 |
| Percent Change in BI Losses | 18.1% | 15.4% | 25.5% | 16.7% | 19.0% | 23.5% | 22.9% | 14.7% | 25.8% | 14.0% | 11.7% | 9.4% |
| 1994 Premium Effect – All Coverages | 9.5% | 8.1% | 13.4% | 8.8% | 10.0% | 12.4% | 12.1% | 7.8% | 13.6% | 7.4% | 6.2% | 5.0% |
| Finance Charge Effect | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% | 2.1% |
| Total Premium Effect – All Coverages | 11.6% | 10.2% | 15.5% | 10.9% | 12.1% | 14.5% | 14.2% | 9.9% | 15.7% | 9.5% | 8.3% | 7.1% |

# Appendix A

## Key Provision of SB 1548 and Corresponding Base Model Assumptions

The key provisions of SB 1548, as provided by AIB legal council, and the assumptions made by the AIB in modeling the effect of SB 1548 on automobile insurance premiums are summarized as follows:

1. ***Elimination of Tort Threshold***
   No impact on size of economic loss distribution except for additional 5% of small (under $2,000) claims.

2. ***Elimination of PIP Coverage***
   Those policyholders that currently purchase medical payments coverage (40%) will continue to do so but will increase their limit from $5,000 to $10,000.

3. ***Health Insurance primary to Medical Payments coverage***
   If claimant has health insurance, medical payments coverage would only pay for those medical expenses not covered (i.e. co-payments, deductibles, etc.. assumed to be 10% of all medical expenses). If claimant does not have health insurance, medical payments coverage is assumed to pay all cost up to policy limit.

4. ***Medical coverage mandatory if no health insurance***
   Those claimants who currently have neither health insurance or medical payments coverage (estimated to be 10%) will purchase medical payments coverage with limit of $5,000.

5 *Wage Payment Coverage*

Those claimants who have health insurance already are assumed to have some kind of wage continuation coverage and therefore will not purchase this coverage. All other claimants are assumed to purchase the coverage with $5,000 limit.

6. *Uninsured Coverage Optional*

No change in purchased limits of coverage.

7. *Underinsured Motorist Coverage Excess*

No change in limits purchased. Coverage assumed to be excess of tortfeasors BI coverage instead of "difference in limits" form presently.

8. *Collateral Source Rule*

The original version of SB 1548 stated that collateral sources ***should*** be considered in awarding damages. The amended bill, which is the basis of the model, revised the wording of the original bill to say that collateral sources ***may*** be considered in awarding damages. In the opinion of AIB's legal counsel, the current wording of the bill effectively means that collateral sources will ***not*** be considered in determining damage awards. We have accepted this legal opinion.

8. *Other Provisions*

Other provisions of SB 1548 include; non-binding mediation on most claims; increases in penalties for insurance fraud; price quotations; claim notification requirements; and policy advisory committees. The effect of these provisions on premiums is not evaluated in the model. We believe that the AIB's conclusion that these provisions, if considered, would have minimal impact on the results, is reasonable.